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its Spherical Figure. It may be polliht upon the same *Plain* applying to it the Paper smoothly cemented on. But here it is to be consider'd, that the polishing, practis'd with this Instrument, is very long and tedious; so that I would advise, after the Glass is wrought to the perfect figure on the *Plain*, to make

* These *Gutters* the Author describes in another part of this Book; where he saith, That there must be a *Polisher* made in the form of a *Gutter*, excavated its whole length; which may also be hollow'd Spherical by means of a wooden Mould, turn'd of a Spherical figure by a Gage, fixt on a Mandril, and made to turn round: which he saith, may also be better perform'd upon certain square Stones of a peculiar kind, which, when he first attempted the working of Glasses, he made great use of.

use of certain Gutters * proportionable to the Sphere, whose Semi-diameter is represented by the length of the Pole above-mentioned; using for the rest, the rules known and observed in the grinding of Convex-Glasses.

So far this Author of this contrivance, which though it be Ingenious and Mathematical, yet is it conceived by skilful and considering Artists, that it will be very difficult to put it into practise with Glasses of any considerable length; it being also much doubted, whether the Author himself hath ever used it, or seen it used in long Glasses.

An Extract

Out of the Italian Giornale de Letterati, about two considerable Experiments of the Transfusion of the Blood.

A Nno 1667. May 8. Here was made in *Bononia* at the house of Signior *Casini* this Experiment, viz. There was open'd the carotid Artery of a Lamb, when the blood was let run as long as it could, into the right branch of the Jugular Vein of another Lamb, from which there had before been drawn so much blood, as was judg'd, it could be supply'd with from a Lamb of the like bigness, whose blood should be let out till it dyed. After this, there were made two ligatures pretty near to one another, in the vein of the Lamb, that had received the blood; and this vein was quite cut thorow between the two ligatures, to see what would happen thereupon. This done, the Lamb was untied, which without any appearance of feebleness, went about, following those that had made the operation. It lived a long while

while after, and its wound being healed up, it grew like other Lambs. But the 5th of *January* 1668, it dyed, and its stomach was found full of corrupt food. Its neck being dissected, to see what had happen'd to the vein cut through, it was found, that it had joyned it self to the next Muscle by some fibres, and that the upper part of that vein had a communication with the lower, by the means of a little branch, which might in some manner supply the defect of the whole trunk.

There was made another Experiment the 20th of *May* last at *Udine*, at the House of *Signior Griffoni*, by the transfusing the blood of a Lamb into the veins of a Spaniel, of a middle size of that kind, 13 years old, who had been altogether deaf for above 3 years, so as what noise soever was made, he gave not any sign of hearing it. He walked very little, and was so feeble, that being unable to lift up his foot, all he did was to trail his body forward. After the Transfusion practised upon him, he remained for an hour upon the Table, where he was yet untied; but leaping down afterwards, he went to find his Masters, that were in other Chambers. Two dayes after he went abroad, and ran up and down the streets with other Dogs, without trailing his feet, as he did before. His stomach also returned to him, and he began to eat more and more greedily than before. But that, which is more surprizing is, that from that time he gave signes, that he began to hear, returning sometimes at the voice of his Masters. The 13th of *June* he was almost quite cured of his deafness, and he appeared without comparifon more jocund than he was before the operation. At length, the 20th of the same Month he had wholly recovered his hearing, yet thus, that when he was called, he turned back, as if he that had called him, had been very far off. But that hapned not alwayes; in the mean time he heard always when he was called.

Another Extract

Out of the Italian Journal, being a Description of a Microscope of a New fashion, by the means whereof there hath been seen an Animal lesser than any of those seen hitherto.

Eustachio Divini hath made a *Microscope* of a new Invention, wherein instead of an Eye-glass convex on both sides, there are two plano-convex Glasses, which are so placed, as to touch one another in the middle of their convex surface. This Instrument, of which *Hon. Fabri* treats largely in his *Opticks* (*viz. Prop. 46.*) hath this peculiar, that it shews the Objects flat and not crooked, and although it takes in much, yet nevertheless magnifieth extraordinarily.

It is almost 16 $\frac{1}{2}$ inches high, and adjusted at 4 different lengths. In the *first*, which is the least, it shews lines 41 times bigger than they appear to the naked Eye : In the *second*, 90 times : In the *third*, 111 times : and in the *fourth* 143 times. Whence one may easily calculate, how much it augments surfaces and solidities.

The Diameter of the Field it discovers, or the subtense of the visual angle, measured upon the Object-plate, in the *first* length is of 8 inches and 7 lines : in the *second*, of 12 inches and 4 lines : in the *third*, of 13 inches : and in the *fourth*, of a little more than 16 inches.

As they viewed with this *Microscope* the little grains of sand scarced, they perceived an Animal with many feet, its back white and scaly, but less than any of those hitherto observed. For, although the *Microscope* shewed every grain of sand as big as an ordinary Nut, yet this Animal appeared no bigger than one of those grains of sand seen without a *Microscope*. Whence may be concluded its smalness, which occasion'd one of the beholders to give it the name of the *Atome of Animals*.